

AMENDMENTS TO THE SPECIFICATION

1. Please amend the specification as follows:
2. Please replace paragraph [0025] with the following replacement paragraph:

In accordance with certain embodiments of the present invention, expansion card 102 comprises a mating detection circuit 120. Mating detection circuit 120 may determine whether any combination of cable connector(s) and/or card connector(s) is mated with their counterparts in computer system 100. In Figure 1, for example, mating detection circuit 120 may determine whether cable connectors 108A/108B, cable connectors 110A/110B and/or ~~AGB card AGP card~~ connectors 106A/106B are mated; that is, whether the expansion card is installed in computer system 100. In one exemplary embodiment, mating detection circuit 120 detects whether the cable connectors; that is, power connectors 110A/110B and USB connectors 108A/108B, are mated. To make such a determination, mating detection circuit 120 monitors, in one particular implementation, the 5VDC signal 126 received through power connector 110A and the USB2 power signal 136 received through USB connector 108A.

3. Please replace paragraph [0027] with the following replacement paragraph:

Figure 2 is a schematic diagram of a standard AGP connector 106A utilized in certain embodiments of the present invention. Of the 132 contacts provided in standard AGP connector 106A, contacts A4 and B4 carry a USB data signal. In the illustrative embodiment, expansion card 102 receives USB3 data+ signal 202A and USB3 data— signal 202B at contacts A4 and B4, respectively. It should be appreciated by those of ordinary skill in the art that, USB3 data+ signal 202A and USB3 data— signal 202B together comprise USB3 data signal 128 introduced above in connection with Figure 1. As shown in Figures 1 and 2, USB3 data signal 128 is routed to signal conditioning circuit 118C in the particular embodiment of the expansion card 102 illustrated in Figure 1. Contacts B5, B13, B31, B37, B49, B55, B61, A5, A13, A31, A37, A49, A55 and A61 of ~~AGB connector~~ AGP connector 106A are grounded in expansion card 102, as shown. All remaining contacts of AGP connector 106A are not used in this particular implementation.

4. Please replace paragraph [0049] with the following replacement paragraph:

Expansion card 102 comprises, as noted, a mating detection circuit 120 that detects whether one or more selected connectors 106A, 108A, 110A of the expansion card are mated with the corresponding connectors. That is, mating detection circuit 120 determines whether USB connector 106A is mated with USB connector 106B; power connector 110A is mated with power connector 110B; and/or ~~AGB connector~~ AGP connector 106A is mated with ~~AGB expansion~~ AGP expansion slot 106B. One or more signals provided by, derived from or controlled by signals received at connectors 106A, 108A and/or 110A is/are monitored by mating detection circuit 120 to make such determination(s). Mating detection circuit 120 generates at least one signal each representing whether a selected combination of one or more connectors 106A/106B, 108A/108B and/or 110A/110B is/are mated.

5. Please replace paragraph [0050] with the following replacement paragraph:

As shown in Figure 7 and as introduced above in connection with Figure 1, the embodiment of mating detection circuit 120 shown in Figure 1 generates a single output signal, mating status signal 132, indicating whether both, USB connectors 106A/106B and power connectors 110A/110B, are mated. The absence of mating status signal 132 indicates either that one of the two connectors 106A/106B or 108A/108B are not mated, or that USB port ~~AGB expansion~~ AGP expansion card 102 is not installed. It should be appreciated that in alternative embodiments, mating detection circuit 120 can generate more than one status signal each representing the mating status of any combination of one or more connectors 106, 108 and 110. This is described in further detail below.

6. Please replace paragraph [0054] with the following replacement paragraph:

Mating detection logic 900 also receives another signal directly or indirectly from, or controlled by, ~~AGB connector~~ AGP connector 106A. The presence of this signal indicates that the card connector(s) are mated, as indicated by signal 910. Mating detection logic 900 implements another AND function 906, generating a mating detection status signal 912 when both, the cable connector(s) status signal 908 and the card connector(s) status signal 910 are present.

7. Please replace paragraph [0055] with the following replacement paragraph:

It should be appreciated by those of ordinary skill in the art that in an alterative embodiment cable connector(s) mated signal 908 and/or card connector(s) mated signal 910 may be generated as output signals similar to mating status signal 912. In such an embodiment all three signals may control individual GPIO bits which are readable by BIOS 114. Such an embodiment may facilitate the diagnosis of an inoperable USB port ~~AGB expansion~~ AGP expansion card 102.

8. Please replace paragraph [0059] with the following replacement paragraph:

Although embodiments of the present invention have been fully described in conjunction with the preferred embodiment thereof with reference to the accompanying drawings, it is to be understood that various changes and modifications may be apparent to those skilled in the art. For example, in the above embodiments, expansion card 102 provides three USB Plus-Power ports 104. In alternative embodiments, expansion card 102 provides a fewer or greater quantity of USB Plus-Power ports 104. As another example, USB ports 104 are USB Plus-Power ports, as described above. The operating voltage transmitted through the universal serial bus is limited to 5 volts. This limits the power that can be consumed by peripherals connected on a universal serial bus. The USB Plus-Power ports 104 implemented in the above embodiment of expansion card 102 provides additional power to USB devices that require power not available through the standard USB ports. It should be appreciated, however, that not all USB ports provided on an ~~AGB expansion~~ AGP expansion card 102 may provide such additional power, and that universal USB ports can be implemented in addition to or in place of the noted USB Plus-Power ports 104. As a further example, detection circuit 120 is implemented on expansion card 102 in the above-described embodiments. In alternative embodiments, mating detection circuit 120 may be implemented in any other component of compute system 100. In a further example, the embodiment of the AGP expansion card 102 includes a voltage doubling circuit 122 to provide +24VDC to one USB Plus-Power port 104C. The voltage doubling circuit 122 will not easily fit on the motherboard of computer system 100 so implementing the circuit on ~~AGB expansion~~ AGP expansion card 102 makes available the +24VDC to USB devices while not requiring significant redesign of the motherboard or the design of a dedicated daughter card. However, it should be appreciated that a USB Plus-Power port 104 that provides +24VDC may not be

implemented in alternative embodiments. Similarly, all USB-Plus-Power port(s) 104 implemented on alternative embodiments of expansion card 102 can provide +24VDC or no ports may provide +12VDC. While not implemented on the expansion cards described above, a USB hub can be implemented in expansion card 102 to expand the number of USB ports. Such an embodiment may be desirable, for example, if USB data signals 134, 138 are not available. In such an embodiment, USB3 data signals present on AGP connector 106A may be attached to a USB hub on expansion card 102. The additional power signal may also be obtained from AGP connector 106 if the current draw is not excessive for such a card connector. Alternatively, the additional as well as the USB power can be obtained from power connector 110A, if available. The USB hub would expand the number of USB ports available on the expansion card. Such changes and modifications are to be understood as included within the scope of the present invention as defined by the appended claims.